FUNCTIONS

The last "big" topic

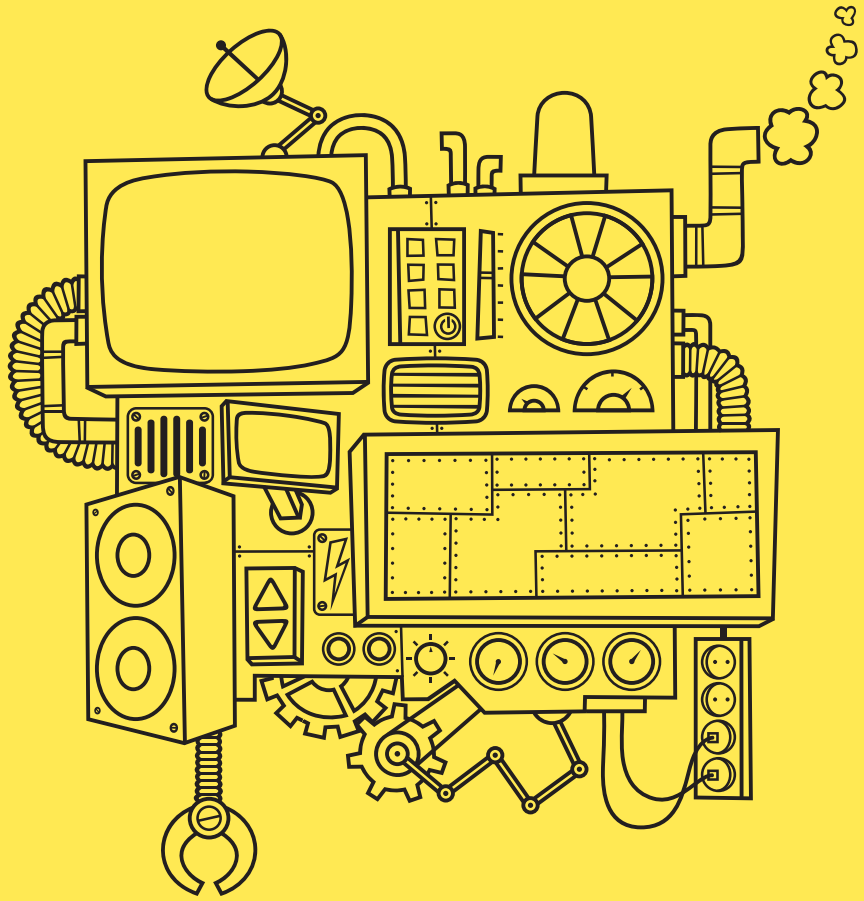
GOALS

- Write valid functions
- Write functions with arguments
- Compare function expressions & function statements
- Write a bunch of functions!

FUNCTIONS

Reusable procedures

- Functions allow us to write reusable, modular code
- We define a "chunk" of code that we can then execute at a later point.
- We use them ALL THE TIME



2 STEP PROCESS

DEFINE

RUN

DEFINE

```
function funcName(){
  //do something
}
```

DEFINE

```
function grumpus() {
    console.log('ugh...you again...');
    console.log('for the last time...');
    console.log('LEAVE ME ALONE!!!');
}
```

RUN

```
funcName();  //run once

funcName(); //run again!
```

RUN

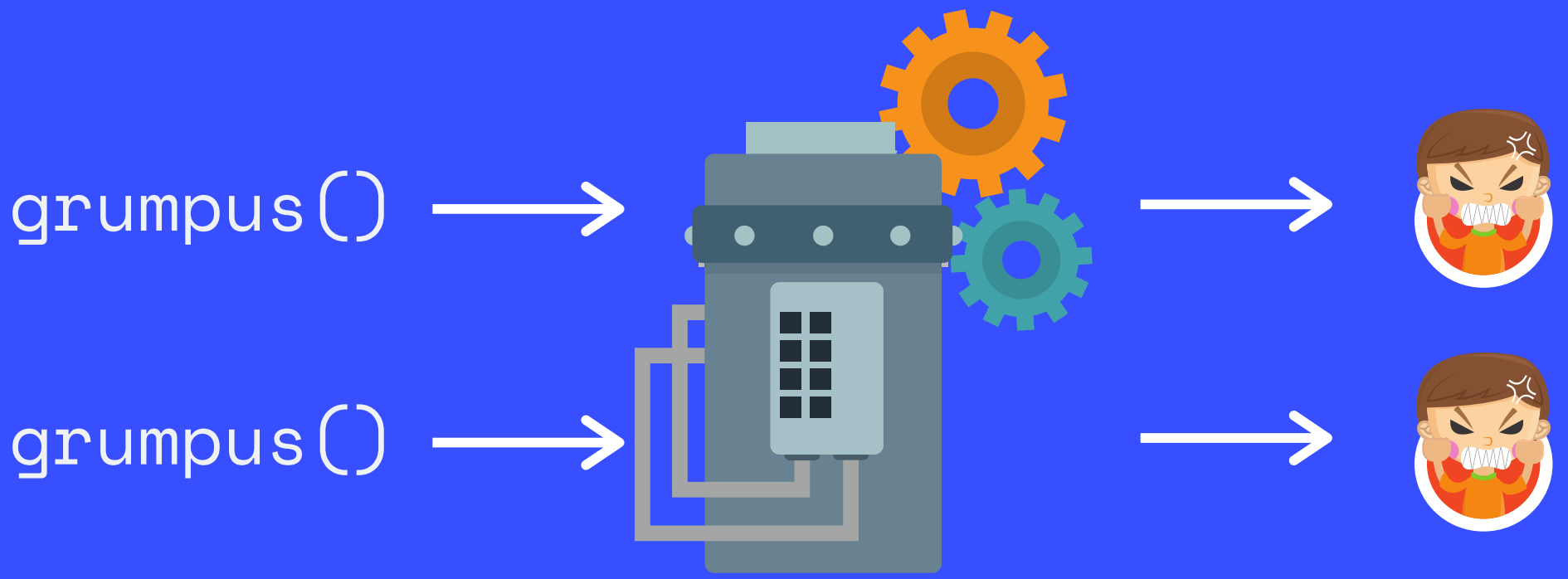
```
grumpus();
//ugh...you again...
//for the last time...
//LEAVE ME ALONE!!!

grumpus();
//ugh...you again...
//for the last time...
//LEAVE ME ALONE!!!
```

ARGUMENTS

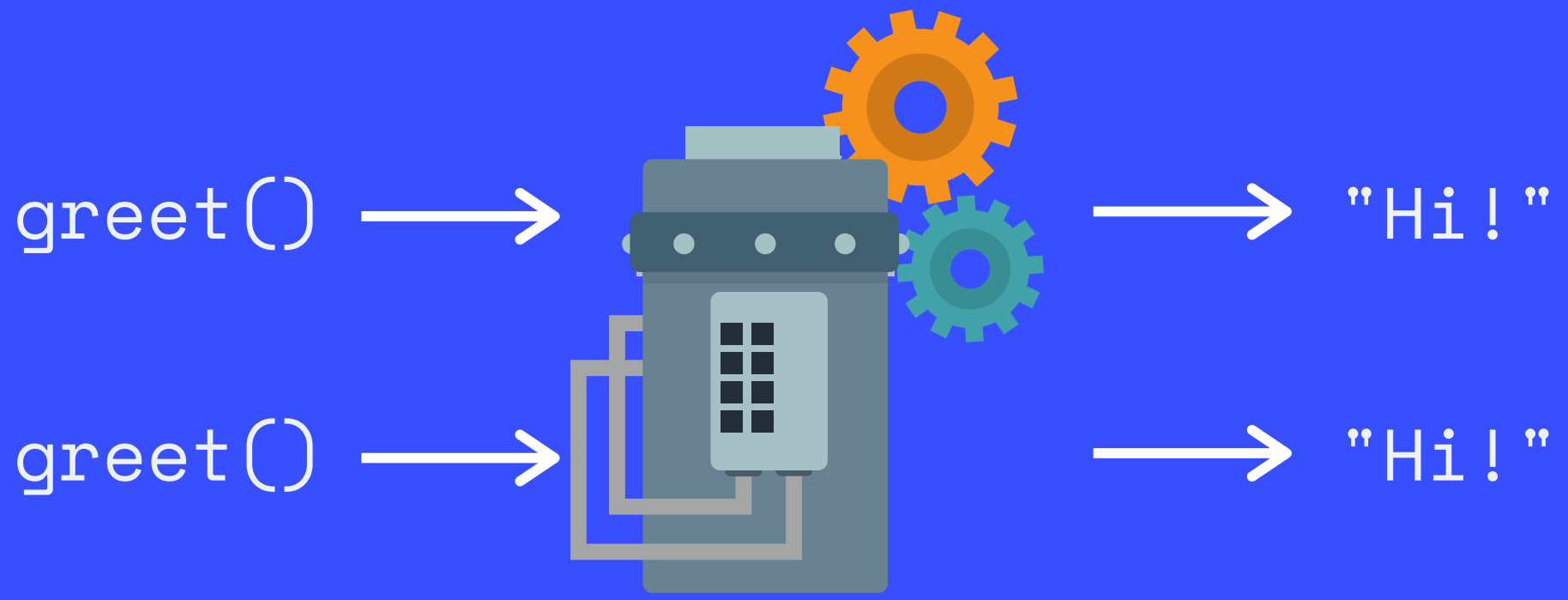
INPUTS

Right now, our simple functions accept zero inputs. They behave the same way every time.

NO INPUTS



NO INPUTS



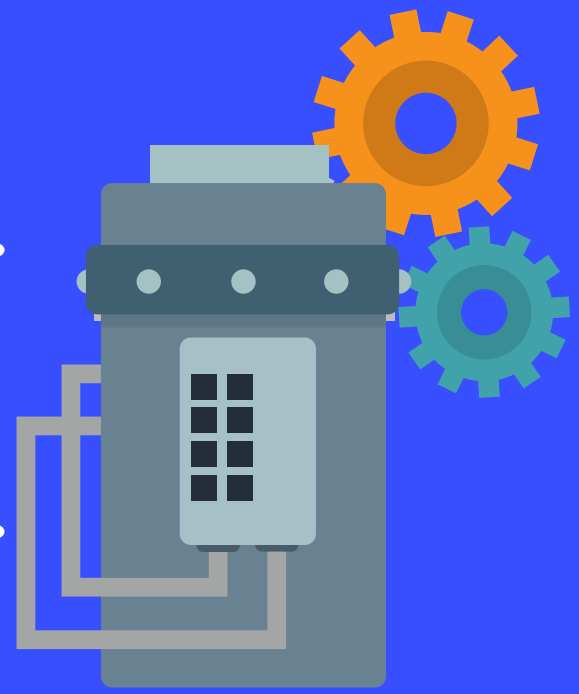
ARGUMENTS

We can also write functions that accept inputs, called *arguments*

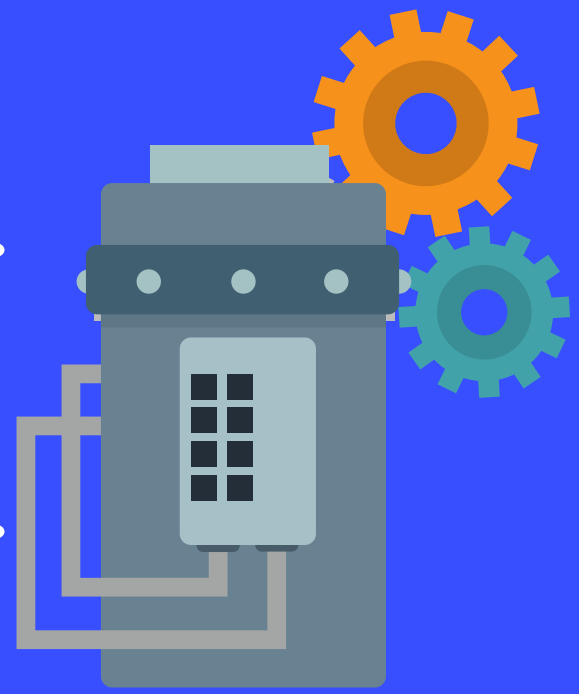
ARGUMENTS

`greet('Tim')` → → `"Hi Tim!"`

`greet('Anya')` → → `"Hi Anya!"`



ONE MORE

avg(20,25) →  → 22.5

avg(3,2,5,6) → → 4

We've seen this before

No inputs

```
//No input
"hello".toUpperCase();
```

Arguments!

```
//Different inputs...
"hello".indexOf('h'); //0
//Different outputs...
"hello".indexOf('o'); //4
```

GREET TAKE 2

```
function greet(person) {
  console.log(`Hi, ${person}!`);
}
```

```
greet('Arya');
```

→ "Hi, Arya!"

```
greet('Ned');
```

→ "Hi, Ned!"

2 ARGUMENTS!

```
function findLargest(x, y) {
    if (x > y) {
        console.log(`${x} is larger!`);
    }
    else if (x < y) {
        console.log(`${y} is larger!`);
    }
    else {
        console.log(`${x} and ${y} are equal!`);
    }
}
```

```
findLargest(-2,77)
```

"77 is larger!"

```
findLargest(33,33);
```

"33 and 33 are equal"

RETURN

Built-in methods **return** values when we call them. We can store those values:

```
const yell = "I will end you".toUpperCase();

yell; //"I WILL END YOU"

const idx = ['a','b','c'].indexOf('c');

idx; //2
```

NO RETURN!

Our functions print values out,
but do NOT return anything

```
function add(x, y) {
    console.log(x + y);
}

const sum = add(10, 16);
sum; //undefined
```

FIRST RETURN!

Now we can capture a return value in a variable!

```
function add(x, y) {
    return x + y; //RETURN!
}

const sum = add(10, 16);
sum; //26

const answer = add(100, 200);
answer; //300
```

RETURN

The *return* statement ends function execution AND specifies the value to be returned by that function

PRACTICE